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REFLECTIONS ON CHOLERA.

BY

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REFLECTIONS ON CHOLERA.

Now that public attention is directed to the subject of Cholera from its presence in our metropolis, I may be allowed to make a few remarks to the profession and to the public generally regarding it; and I shall endeavour to be as brief as possible.

I address myself to the public, because I consider that epidemic diseases embrace and involve a wider field of inquiry and scientific investigation than is generally embraced by the members of our profession; and so long as the inquiry is confined to them, I believe the theory of the disease will never be discovered.

In proof of this, it is only necessary to advert to the various and diversified forms of treatment and plans of cure that have been proposed for the disease; most, nay all of which, are nothing more than old plans renewed again for the present occasion; and the various theories that have been devised to account for the intimate nature of the disease; showing us that in these two points we are not a bit further advanced than we were

during its first visitation in 1831, and its second visitation in 1848 and 1849. And the reason is obvious; for medical men are too exclusively directing their attention to the discovery of the proximate cause of the disease in the intimate condition of the human organism in which the disease consists.

Now it is very probable that we shall never arrive at a correct knowledge of the poison occasioning Cholera, and it is very probable that we shall never arrive at a true knowledge of that peculiar condition of the atmosphere which facilitates the spread of the Cholera poison.

Under these circumstances, it becomes all the more important that we should utilize those facts that are known connected with it, and leave its intimate nature for a future stage of the inquiry.

What should we think of an astronomer who would direct his whole attention to the investigation of the intimate nature of gravitation, which is and probably ever will be inscrutable, and neglect those beautiful, useful, and unerring laws by which gravitation manifests itself, and conduces to the uses of social and scientific life in so many different ways? And yet this is just what physicians seem to be doing in regard to Cholera at the present moment. It is impossible, in the present state of our knowledge, to say whether the proximate cause of Cholera will ever be discovered; but there are other facts in regard to it which are quite within the range of legitimate inquiry.

We know nothing of the nature of light, yet we put it to a thousand valuable uses; we know nothing of the

nature of heat, yet by it the most intractable bodies of the mineral world are moulded and fashioned to supply our various wants.

We know nothing of the nature of gravitation, yet the laws of its action are thoroughly understood, and the most distant and erratic bodies of the material universe move in strict accordance with the calculations of the mathematician.

To borrow an illustration from the science of medicine itself. Will any farsighted pathologist acquaint me with what is the intimate nature of inflammation? I have read volumes on this subject, and confess that I am still as ignorant as ever. I know the phenomena of inflammation; I know the treatment of inflammation; and this is, after all, all that is practically useful; and I should consider it now, after the failure of so many attempts by the most talented men of our profession, a mere waste of time to devote my time to the comparatively useless inquiry after its intimate nature.

Will any scientific physician acquaint me with the intimate nature and changes in the vital functions in fever? I confess that I have laboured hard to acquire an insight into the various forms and nature of fevers; but I am still in total ignorance of the proximate cause of fever.

A patient is presented to me to-day, who yesterday appeared to be in perfect health; his features are sharp and pinched; he tells me that he is intensely cold, and the rigours are so severe as to agitate with violence the iron framework on which he is reclining, and the agony

of the congestive stage is so great, that I almost expect speedy dissolution. I have been familiarized with these phenomena, however, and I know that the patient is only labouring under the cold and congestive stage of an intermittent fever, from which, by prompt and proper treatment, he will speedily recover.

Cholera visits us at occasional times, and during these visits the interest excited by it is intense, and the measures used to mitigate its violence as strenuous as need be and deserving of all praise; but the phase of the epidemic passes off, all interest in the visitation dies away, all sanitary measures are neglected, or so inefficiently performed that they do more harm than good, by setting loose noxious effluvia and emanations, without effectually controlling and removing them.

In fact, we forget all about the visitation; the visitation, however, does not forget us. At its usual term the fell disease again returns to find us again quite unprepared for its recurrence. It runs through its full career notwithstanding and in spite of, nay I might almost say by virtue of, the very imperfect sanitary measures that have been used to avert it. It is surely now time that the public health was placed under the superintendence of distinct qualified medical officers, appointed to the various districts of the country, in the same way as coroners are distributed and salaried by Government, and removed from the very inefficient control of parochial boards, who are generally unqualified persons in the first place, and being house proprietors in the second place, are

exceedingly averse to, and throw every obstacle in the way of, social and sanitary reform, as interfering with their proprietary rights.

Public opinion and the supreme power of the law should carry out this reform as it did the intramural burial-ground question. Certainly, if mines, factories, education, schools, sudden deaths, claim the paternal and protecting care of Government, the public health is a matter of at least equal importance with any of these institutions.

Now there are two points in the history of Cholera which must never be forgotten : there is the existence of a peculiar poison which develops itself with immense rapidity and intensity ; there is also a peculiar state of the atmosphere which favours the propagation, and evolution, and development of the poison.

In regard to the Cholera poison, I fear that chemical science must be very much further advanced before we can hope to arrive at any satisfactory elucidation of its nature ; but this much we do know, that it intensifies itself most peculiarly in the secretions and excretions of the individual affected (and what contagious animal poison of a morbid nature does not do the same ?). But as to its exact nature it is very doubtful if ever we shall arrive at anything positive and definite.

In regard to the epidemic constitution of the atmosphere, it is also very problematical if we shall ever obtain correct results, so subtle is the change as to set at defiance the

most delicate of all our meteorological instruments and observations.

But these questions regarding the nature of the poison and the constitution of the atmosphere are after all more mere matters of scientific refinement than of any practical importance.

If we knew the time of the expected return of the disease, and I maintain that we may always know this perfectly well, and are thereby prepared by extraordinary sanitary precautions adopted before the expected return to prevent the occurrence of the outbreak altogether, surely this is better than barren speculation regarding subjects which we shall probably never be able to understand.

There is one important point in the history of Cholera to which also it is very necessary to advert.

Proposition XXXIII. Cholera, as a general rule, always haunts in preference the banks of rivers or towns built near the sea-shore. In evidence of this fact it is only necessary to remind the reader of its ravages in Paris, London, Liverpool, and Southampton, Constantinople, and Alexandria. The truth of this important proposition was prominently brought out by a return made by order of the Indian Government to certain queries addressed to the commanding officers of the various regiments, both native and European. One and all bore testimony to this important fact. This fact is considered of so much consequence that, during the prevalence of an epidemic of Cholera in the locality of a regiment on the line of march in India, the vicinity of a river as a

halting station is always if possible avoided. I regret exceedingly that this important fact was entirely omitted as a general proposition in my book on epidemic diseases.

Now, although I maintain that atmospheric chemistry and meteorology must be very much further advanced before we can hope to identify and eliminate the peculiar physical conditions upon which Cholera and, indeed, all epidemic visitations depend, there is one certain and unerring guide which invariably accompanies their occurrence.

The only cosmical body that can at all possibly exercise any influence upon our atmosphere is the moon.

Now it so happens that in all the epidemics that I have examined, the moon assumes a peculiar relation to the terrestrial equator, which is indicated by a peculiar limitation of the lunar node. This has been exactly the same, not only in the three last outbreaks of Cholera, but in all the epidemics which I have examined.

In the three last epidemic outbreaks of Cholera, in 1831-32, in 1848-49, and 1866, and indeed in all great epidemics, the longitude of the lunar node has been about 180° , or something less than 180° , and may always be used confidently as a warning and a guide that an epidemic visitation may be expected, and anticipated by proper precautionary measures.

Surely it is worth while to investigate the truth of this very simple and elementary astronomical fact by the Committee which has been appointed to consider the circumstances connected with the present outbreak of Cholera, particularly in the absence of any other rational physical cause whatever.

Of one fact I am quite convinced, that we shall never advance a step further in the investigation of Cholera invasions, and unravelling their phenomena, until some thoroughly new and hitherto unexplored facts are introduced into the inquiry.

In October of last year, 1865, I took the liberty of laying before the medical profession a small work on the subject of epidemic diseases.*

In regard to this work I attempted to introduce an entirely new element into medical science, namely, that of rigid calculation.

My object was to demonstrate that epidemic diseases, so far from occurring at random and indiscriminately, observe certain fixed laws and periods of recurrence, which it is very easy and simple to calculate.†

The utility of this plain fact must be obvious to every one; it enables us to anticipate their occurrence months and years before their outbreak, and in consequence to adopt all those sanitary and precautionary measures by which alone we can hope to mitigate their ravages, and in the perfect carrying out of which measures we may hope eventually to extirpate epidemic pestilences entirely from the world.

And here I may be allowed to remark that in my

* "A Theoretical Inquiry into the Physical Cause of Epidemic Diseases." J. Churchill & Sons, London.

† *Ibid.*

opinion all the precautionary measures that can be adopted after an epidemic has once declared itself in a country can be only of very limited and partial efficacy, if not entirely nugatory.

The predisposition to the epidemic attack has been at work months and years before its occurrence, in the shape of deleterious emanations and exhalations, unhealthy miasmata of various descriptions, and polluted sources of the water used for drinking purposes, in consequence of the wretched sanitary condition of our cities and towns: hence the great advantage that I conceive to arise from being able to foresee and prepare for epidemics.

In order to show that this is quite a possible and feasible undertaking, I may be allowed to refer to a few personal circumstances in connection with the present and the last great outbreak of Cholera, in both of which I was able to apply calculation with the most satisfactory results.

Having given great attention to the subject of epidemics, and being quite convinced in my own mind that they observe certain and definite periods of recurrence, and that a period of eighteen years and a half is the term of their periodical return, I wrote a letter in April of last year to the Home Secretary, stating to him that most likely this country, and indeed Europe generally, would be visited by a severe epidemic of Cholera during the year 1865, or at latest 1866; and that peculiar and particularly stringent sanitary measures should be adopted throughout the length and breadth of the land.

I received a courteous reply from the office of the

Home Secretary, which I still possess, as proof of the correspondence. Now I dare say, and in fact I could hardly expect, that my humble suggestion would receive any further notice from the Government. But shortly after this, the Cholera declared itself in a most virulent form at Mecca and Medina, about June, I think, 1865, which was followed by the panic occasioned by its occurrence at Alexandria, and the dreadful havoc it caused at Constantinople; a havoc and mortality, I may remark, only equalled by the very worst epidemics of the middle ages. From Constantinople it spread along the shores of the Mediterranean, has invaded the capital of most of the countries of Europe, and has at last declared itself in the metropolis of our own island. Now, had not all these circumstances occurred, I believe that no further attention would have been given by the Government to extraordinary sanitary precautions. But the occurrences to which I have referred forced upon the Government some active precautionary measures. Hence the Privy Council's minute regarding outports and seaports;* the meeting and admirable suggestions of the Epidemiological Society;† the reports of Mr. Simon, Physician to the Privy Council; of Mr. Radcliffe,‡ Secretary to the Epidemiological Society; and of the Registrar-General.

* Privy Council Minute, reported in the *Glasgow Herald* newspaper of July 30th and 31st, 1865.

† Meeting of the Epidemiological Society, 17th August, 1865, reported in the *Scotsman* newspaper, 19th August, 1865.

‡ Mr. Radcliffe's admirable report on the present diffusion of Cholera in Europe will be found in the eighth report of the Medical Officer of the Privy Council.

Now, it is well worthy of observation, that when I wrote my letter to the Home Secretary, and received his reply in return, there was not, so far as I am aware, the slightest vestige of a Cholera epidemic, properly so called, in any part of the known world. It is no exception to this statement, that there might be a few cases of Cholera in our Eastern possessions, from which no conclusions can be drawn, as they are within the epidemic limits, and Cholera is always more or less prevalent there, just as plague is in Egypt.

But further than this, when I first began to turn my attention to the subject of epidemic diseases, about the years 1844 or 1845; and when I had succeeded in collecting a sufficient number of epidemics, from which to form a generalization, I soon became quite convinced that they observe a certain definite and periodic law of recurrence. Now, if my theory, that they do recur in a period of eighteen years and a half was correct, it is evident that an epidemic of Cholera was due in the year 1849, as the first epidemic visitation of Cholera occurred in 1831. I accordingly suspended my labour of collecting notices of epidemics for a short time, and awaited with some degree of impatience the advent of the year 1849; intending, that if Cholera then revisited the world, and should become a universal or even a general epidemic, I should then resume my labour, and if possible, bring my views to completion; and that if Cholera did not then again revisit the world as a general epidemic, I would abandon the subject altogether. Cholera did come, according to my anticipation and computation, as a

universal epidemic in the year 1848-49, and I resolved unweariedly to add to my collection of epidemic diseases, all that I should meet with by the most industrious research; and as all that I met with still coincided with an eighteen year and a half return, I was so far confirmed in the truth of the theory which I had adopted. But lest I should seem to be reasoning on too narrow a basis from a single anticipated verification of my computation, I determined that I would again wait for the next expected return of Cholera in 1866, resolving in this instance, that if the epidemic should again become prevalent and universal, and my conclusions should again be verified, I would give my labours to the public, and that if Cholera did not become a universal epidemic in the year 1866, I would suppress my views altogether.

The year 1866 has arrived, the Cholera epidemic has come, and threatens to become more universally spread than ever it has yet been before.

Now, I humbly ask, is there any other way of accounting for these two important facts of the application of a law derived from the intimate study of their previous occurrence in the world to two foreseen and anticipated epidemics than in the way of intelligent and laboured calculations?

I regret that my views have not met with that acquiescence and concurrence that I should have expected the scientific world to accord to a wellverified scientific fact; and I regret this all the more as the neglect of these simple and easily ascertained facts involves a mortality

which is disheartening to contemplate and which might so easily be avoided.

For my deductions were supported with an unbroken chain of important and universal epidemics, all occurring within about the time specified, from the year 1349 to the year 1866.

And not only so, but I carried the eighteen years and a half theory into the most remote periods of time from which we can derive anything like authentic data relating to the subject of epidemic diseases, and I found that the same law of recurrence pervaded and embraced them all however remote. A generalization extending over a period of 2,300 years is surely a wide enough basis from which to draw a reliable deduction.

Now, even supposing that the eighteen years and a half theory were not true, what harm would result from a thorough and searching sanitary reformation shortly, say a year, before the expected return of an epidemic visitation? Would not, on the contrary, the most unmitigated benefit be the result of such a periodic sanitary renovation? This might even be extended to an extraordinary sanitary movement carried out every five years, and made to correspond with the quinquennial national census.

If, as has been proposed, there is to be a Government inquiry regarding the statistics of the present outbreak of Cholera—and the subject will never be thoroughly investigated without such an official inquiry,—why should not the question of its periodic return form part of that inquiry before the Committee?

It would, it appears to me, be necessary that a person

having a slight knowledge of those influences that affect our atmosphere from without, as well as a person having some knowledge of meteorology, should be associated with the medical gentlemen selected to investigate the subject ; it would also be necessary that all minor epidemics, such as small-pox, influenza, *trousse galante*, and a thousand others, with which systematic works on epidemics abound, as well as all endemics, should be rigidly excluded from the investigation.

There is one circumstance of remarkable importance in the history of the present epidemic, as throwing great light on the subject generally ; and that is, that it has been preceded and accompanied with an epidemic likewise among cattle. This we find constantly occurring in the history of ancient epidemics : nothing is more common than to meet with the observation in ancient history, “The disease which had in the previous year affected cattle, now fell upon men.” This important fact demonstrates that there is some material change in the atmosphere quite independent of all specific contagion, which facilitates the propagation of epidemic diseases.

As the relation of Cholera and cattle plague is a coincidence of remarkable interest at the present moment, as proving that these diseases originate from *cœsmical* and not simply from local or terrestrial causes,—otherwise they would be perpetually in existence, and not periodic in their recurrence,—I may just briefly advert to a few illustrations of the same concurrence of epidemic pestilences along with cattle-plague on previous occasions, from Mr. Bascome’s “History of Epidemic Pestilences” :

Page 1, B.C. 1495; p. 3, B.C. 790; p. 3, B.C. 545; p. 6, B.C. 463; p. 8, B.C. 427; p. 10, B.C. 291; p. 10, B.C. 218; p. 11, B.C. 181; p. 11, B.C. 173. Pestilentia quæ priore anno ingruerat in boves, eo verteret in hominum morbos; qui inciderant haud facile septimum diem superabant; qui superaverant longinquo maximæ quartanæ implacabantur, morbo. Livy, pp. 12, 13, B.C. 134; p. 13, B.C. 126; p. 16, B.C. 49; so admirably described by Virgil.

I shall not in this brief memoir attempt to go any further into this deeply interesting subject.

These numerous instances, hurriedly extracted from a single author, and from a few consecutive pages of that author, is surely an overwhelming evidence that there is a coincidence and a relation between the concurrence of epidemic pestilences among men and epizootic diseases among cattle; and that they must be both traced to the same cause; and, further, that this cause is one of universal extent, and not confined to particular localities. In fact, that it is cosmical, and not simply terrestrial in its origin and nature; thereby showing the expediency of associating gentlemen acquainted with general science, particularly meteorology, as Mr. Glaisher, and the influence of the moon upon our atmosphere—which would most efficiently be investigated by Mr. Hind, of the Nautical Almanac Office, along with the medical gentlemen selected for the committee of inquiry.

In the preceding brief enumeration of the concurrence of pestilences and cattle plague, I have not attempted to consider the mutual relation of these two phenomena

since the Christian era. This would be a task far beyond the limits I have proposed to myself in this brief memoir. The curious reader will find the above statements amply confirmed, so far as concerns the modern statistics of the concurrence of epidemics and epizootics, by Sir William R. Wyldé; "Census of Ireland for the year 1851;" "Tables of Deaths," vol. i., 1856; also by all the other systematic writers on epidemic pestilence, such as Bascome, Noah Webster, Dr. Short, Villalba. Ozanam has even a separate article on the subject of epizootics, which veterinarian writers might consult with advantage.

In conclusion, and to enforce my arguments by a very simple illustration, I cannot prevent the rising of the tide, but I can avoid building my house on the sand and within the influence of the tide, so that it shall not be swept away by it.

In the same way I cannot prevent that state of the atmosphere which is favourable to the development and propagation of epidemic diseases and the epidemic poison, but we can remove all those social and domestic sources in which the epidemic poison originates, by proper anticipatory sanitary precautions, and by so doing prepare ourselves for their invasion.

We are not to suppose that an All-wise Providence has constructed the material universe with the necessary imperfection that it is to be liable at certain times, from a faulty construction, to periodic visitations of epidemic pestilence; but it is so constructed that if man does not

attend to the most obvious social and sanitary laws, there is a principle of rectification in the providential construction of our social system which will visit with a terrible and deadly penalty any departure from those social and sanitary laws with which we are expected to conform.





